DATA VALIDATION REPORT

PROJECT NAME: GREGG COUNTY REFINERY
LONGVIEW, TEXAS

LABORATORY: EPA REGION 6 HOUSTON LABORATORY

WORK ORDERS: 1404009, 1404012, 1404019, AND 1404020

DATA VALIDATION REPORT

Company:	Toeroek Associates, Inc.
Project Name:	Gregg County Refinery, Longview, Texas
Laboratory:	EPA Region 6 Houston Laboratory
Work Orders:	1404009, 1404012, 1404019, and 1404020
Data Validator:	Krista Lippoldt
Date Validated:	June 6, 2014
Data Validation Criteria:	As listed in Worksheet #12 of the Gregg County Refinery UFP-QAPP Revision 1 dated 3/31/2014, USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review dated June 2008, and USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review dated January 2010.
Validation Reviewer:	
Date Reviewed:	
Sample Media:	Surface and Subsurface Soil
Analytical Parameters and Methods[1]:	Volatile Organic Compounds (VOCs) by EPA Method 8260C; Semivolatile Organic Compounds (SVOCs) by EPA Method 8270D; Metals by EPA Method 6010B/6020A; Mercury by EPA Method 7470A/7471B

[1]The methods listed may be different than those listed in the data package. These methods were provided by the EPA Region 6 Houston Laboratory in an email dated August 01, 2014 (see attached).

Sample Identification:

Sample Number*	Date	Cooler	Type of Sample	QC Sample
ERBSB1	4/8/2014	Unknown	EB	X
ERBSS1	4/8/2014	Unknown	EB	X
TB1	4/8/2014	Unknown	TB	X
SS12	4/8/2014	Unknown	SS	
SS13	4/8/2014	Unknown	SS	
SS13-DUP	4/8/2014	Unknown	SS Duplicate	X
TB3	4/8/2014	Unknown	TB	X
SS17B	4/8/2014	Unknown	SS	
SS17B	4/8/2014	Unknown	SS	
SS17B-DUP	4/8/2014	Unknown	SS Duplicate	X
SS17B-DUP	4/8/2014	Unknown	SS Duplicate	X
SS17C	4/8/2014	Unknown	SS	
SS17C	4/8/2014	Unknown	SS	
TB4	4/8/2014	Unknown	TB	X

Sample Number*	Date	Cooler	Type of Sample	QC Sample
SFB1	4/8/2014	2	FB	X
SFB2	4/8/2014	2	FB	X
TB2	4/8/2014	2	TB	X
ERBSB2	4/9/2014	5	EB	X
SFB3	4/9/2014	5	FB	X
SFB4	4/9/2014	5	FB	X
TB5	4/9/2014	5	TB	X
SB12A	4/9/2014	6	SB	
SB12A	4/9/2014	6	SB	
SB12B	4/9/2014	6	SB	
SB12B	4/9/2014	6	SB	
SB12C	4/9/2014	6	SB	
SB12C	4/9/2014	6	SB	
SB12C	4/9/2014	6	SB	
SB18A	4/9/2014	6	SB	
SB18A	4/9/2014	6	SB	
SB18B	4/9/2014	6	SB	
SB18B	4/9/2014	6	SB	
SB18C	4/9/2014	6	SB	
SB18C	4/9/2014	6	SB	
TB6	4/9/2014	6	TB	X
SB14A	4/9/2014	7	SB	
SB14A	4/9/2014	7	SB	
SB14B	4/9/2014	7	SB	
SB14B	4/9/2014	7	SB	
SB14C	4/9/2014	7	SB	
SB14C	4/9/2014	7	SB	
SS1	4/9/2014	7	SS	
SS8	4/9/2014	7	SS	
TB13	4/9/2014	7	TB	X
SB13A	4/10/2014	8	SB	
SB13B	4/10/2014	8	SB	+MS/MSD
SB13C	4/10/2014	8	SB	
SB13C-Dup	4/10/2014	8	SB Duplicate	X
TB10	4/10/2014	8	TB	X
SB10A	4/10/2014	9	SB	
SB10B	4/10/2014	9	SB	
SB10C	4/10/2014	9	SB	
SB9A	4/10/2014	9	SB	
SB9B	4/10/2014	9	SB	
SB9C	4/10/2014	9	SB	
SS14	4/10/2014	9	SS	
SS2	4/10/2014	9	SS	

Sample Number*	Date	Cooler	Type of Sample	QC Sample
TB11	4/10/2014	9	TB	X
SB11A	4/10/2014	10	SB	
SB11B	4/10/2014	10	SB	
SB11C	4/10/2014	10	SB	
SS15	4/10/2014	10	SS	
SS3	4/10/2014	10	SS	+MS/MSD
TB12	4/10/2014	10	TB	X
ERBSB3	4/10/2014	11	EB	X
SFB5	4/10/2014	11	FB	X
TB14	4/10/2014	11	TB	X

* Sample Numbers are as listed in data package.

Note:
SS = Surface Soil Sample
SB = Subsurface Soil Sample
Duplicate = Duplicate Sample
EB = Equipment Blank
FB = Field Blank
MS/MSD = Extra Volume for Matrix Spike/Matrix Spike Duplicate
TB = Trip Blank

1. SAMPLE INTEGRITY

1.1 SAMPLE COLLECTION

All samples were collected, handled, and identified as required by the QAPP except the samples, as noted in the Sample Identification section, were not accompanied by a chain of custody form to the laboratory.

Qualification: Because it is unknown if the custody was broken for the samples that were delivered to the laboratory without a chain of custody form, these samples should be considered estimated (J) and the results should be used with caution.

1.2 PRESERVATION

Acceptable.

1.3 HOLDING TIMES

Acceptable.

2. ANALYTICAL METHODS

The following table identifies analytical methods that were not consistent with the UFP-QAPP:

Parameter	UFP-QAPP Method	Chain of Custody Method	Laboratory Method[1]
VOCs	8260C	8260C	8260C
SVOCs	8270D	8270D	8270D
Metals	6020A	6020A	6010B/6020A*
Mercury	7470A/7471A	7040A/7041A*	7470A/7471B*

*These analytical methods were not consistent with the UFP-QAPP.
Note: The VOC method was listed incorrectly in the UFP-QAPP as 8260C but should have been listed as the most current promulgated method which is 8260B.

[1]The methods listed may be different than those listed in the data package. These methods were provided by the EPA Region 6 Houston Laboratory in an email dated August 01, 2014 (see attached).

Although the chain of custody identified the incorrect analytical method for mercury analysis and the laboratory analyzed the samples using the incorrect methods for SVOCs, metals, and mercury, it has been determined that the data is acceptable for its intended use.

3. EVALUATION OF ACCURACY, PRECISION, AND REPRESENTATIVENESS

3.1 BLANKS

When comparing aqueous blank contamination to solid sample results, 1 microgram per liter (µg/L) is approximately equivalent to 20 times the aqueous concentration for analytes reported in microgram per kilogram (µg/kg) or 0.02 times the aqueous concentration for analytes reported in milligrams per kilogram (mg/kg). The solid equivalent values have been calculated and listed in parentheses below next to the measured blank values reported in µg/L. In the lists below, "Blank" indicates the laboratory blank.

3.1.1 VOCs

Acceptable except the following:

Blank - Bromomethane at 1.2 µg/L (24 µg/kg)

ERBSB3 - Chloroform at 4.4 µg/L (88 µg/kg)

SFB5 - Chloroform at 4.3 µg/L 86 µg/kg)

Qualification: Positive results greater than (>) the RL but < the blank concentration should be reported as the blank concentration and qualified as nondetect (U), and results > the RL and the blank concentration but < 5 x the blank concentration should be qualified as nondetect (U).

3.1.2 SVOCs

Acceptable.

3.1.3 Metals

Acceptable except the following:

ERBSB3 - Copper at 313 µg/L (6.26 mg/kg)
Iron at 231 µg/L (4.62 mg/kg)
Sodium at 47,800 µg/L (95.6 mg/kg)
Zinc at 109 µg/L (2.18 mg/kg)
Lead at 30.8 µg/L (0.616 mg/kg)

SFB5 - Copper at 325 µg/L (6.5 mg/kg)
Sodium at 48,900 µg/L (97.8 mg/kg)
Zinc at 110 µg/L (2.2 mg/kg)
Lead at 33.4 µg/L (0.672 mg/kg)

Qualification: Positive results > the RL but < 10 times the blank concentration should be reported as the blank concentration and qualified as estimated high (J+).

3.2 LABORATORY CONTROL SAMPLES (LCSs)

3.2.1 VOCs

Acceptable except the following (only lowest and/or highest is noted):

Dichlorodifluoromethane at 342 percent recovery (%R)

Vinyl chloride at 67.6 and 138 %R

Trichlorofluoromethane at 188 %R

1,1-Dichloroethane at 130 %R

Carbon disulfide at 126 %R

1,1,2-Trichloro-1,2,2-trifluoroethane at 229 %R

Cyclohexane at 198 %R

Methylcyclohexane at 163 %R

Qualification: All positive results for analytes listed above should be qualified as estimated (J).

3.2.2 SVOCs

Acceptable.

3.2.3 Metals

Acceptable.

3.3 MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

3.3.1 VOCs

Acceptable except the following (only lowest and/or highest is noted):

Acetone at 39.3 and 188 %R

Qualification: Data should not be qualified based on MS/MSD data alone and, therefore, no data were qualified. Although it should be noted that, even though the %R is not calculable because the parent concentration was nondetect, 1,2,4-trichlorobenzene had an extremely low recovery, and, therefore, results for this analyte should be used with caution.

3.3.2 SVOCs

Acceptable except the following (only lowest and/or highest is noted)::

Pyrene at 158%R

Qualification: Data should not be qualified based on MS/MSD data alone and, therefore, no data were qualified. Although it should be noted that, even though the %R is not calculable because the parent concentration was nondetect, 3,3'-dichlorobenzidine had an extremely low recovery and, therefore, results for this analyte should be used with caution.

3.3.3 Metals

Acceptable except the following:

Barium at 73.2%R

Chromium at 50.3%R and 140%R

Manganese at 68.2%R

Vanadium at 46.6%R

Zinc at -21%R

Qualification: Positive results for barium, manganese, and vanadium should be qualified as estimated low (J-) and the nondetects should be qualified as nondetect with an estimated RL (UJ). All positive chromium samples should be qualified as estimated (J) and nondetects as nondetect with an estimated RL (UJ). Positive results for zinc should be qualified as estimated low (J-) and nondetects should be rejected (R).

3.4 LABORATORY, MS/MSD, AND/OR FIELD DUPLICATES

3.4.1 VOCs

Acceptable except the following MS/MSD relative percent differences (RPDs) for the following:

Acetone at 110%

Cyclohexane at 30.7%

Methylcyclohexane at 41.5%

Dibromochloromethane at 34%

Bromoform at 49%

ortho-Xylene at 30.4%

Isopropylbenzene at 40.4%

1,3-Dichlorobenzene at 59.9%

1,4-Dichlorobenzene at 59.6%

1,2-Dichlorobenzene at 64.8%

1,2-Dibromo-3-chloropropane at 53.8%

1,2,4-Trichlorobenzene at 86.5%

Qualification: Data should not be qualified based on MS/MSD data alone and, therefore, no qualification is necessary for these analytes.

3.4.2 SVOCs

Acceptable except the following MS/MSD RPDs for the following:

4,6-Dinitro-2-methylphenol at 30.6%

3,3'-Dichlorobenzidine at 59%

Qualification: Data should not be qualified based on MS/MSD data alone and, therefore, no qualification is necessary for these analytes.

3.4.3 Metals

Acceptable except the following:

MS/MSD - Mercury at 40.3%

SS13/SS13-DUP -

Aluminum at 66%

Barium at 55%

Calcium at 56%

Chromium at 53%

Copper at 101%

Magnesium at 54%

Vanadium at 53 %

SS17B/SS17B-DUP -

Calcium at 166%

Manganese at 73%

SB13C/SB13C-Dup -

Arsenic at 98%

Qualification: For the MS/MSD that has an RPD outside of acceptable criteria, all positive results for the above analytes should be considered estimated (J) and all nondetect results should be qualified as nondetect with an estimated RL (UJ). For field duplicate results outside of acceptable criteria, only results for the duplicate pair should be qualified as estimated for positive results and nondetect with an estimated RL (UJ) for nondetects.

3.5 SURROGATES/INTERNAL STANDARDS

3.5.1 VOCs

Acceptable except the following:

4-Bromofluorobenzene at 59.1% in sample SS12

4-Bromofluorobenzene at 58.2% in sample SS8

4-Bromofluorobenzene at 68.2% in sample SB13C

4-Bromofluorobenzene at 149% in sample SB10B

Qualification: Positive results for the compounds below in samples listed above should be qualified as estimated low (J-) for samples with a 4-bromofluorobenzene %R < 100% and estimated high (J+) for samples with %Rs > 100. Nondetect results for compounds below in samples listed above with 4-bromofluorobenzene %R < 100% should be qualified as nondetect with estimated reporting limits (UJ).

The following compounds are associated with 4-bromofluorobenzene:

Chlorobenzene

Bromoform

Styrene

iso-Propylbenzene

Bromobenzene

n-Propylbenzene

2-Chlorotoluene

4-Chlorotoluene

1,3,5-Trimethylbenzene

tert-Butylbenzene

1,2,4-Trimethylbenzene

sec-Butylbenzene

1,3-Dichlorobenzene

1,4-Dichlorobenzene

p-iso-Propyltoluene

1,2-Dichlorobenzene

n-Butylbenzene

1,2-Dibromo-3-chloropropane

1,2,4-Trichlorobenzene

Naphthalene

Hexachlorobutadiene

1,2,3-Trichlorobenzene

3.5.2 SVOCs

Acceptable except the following:

Terphenyl-d14 at 140% in sample SS12

Terphenyl-d14 at 168% in sample SS13

Terphenyl-d14 at 164% in sample SS13-Dup

Terphenyl-d14 at 153% in sample SB18A

Terphenyl-d14 at 170% in sample SS8

Terphenyl-d14 at 144% in sample SS15

Terphenyl-d14 at 161% in sample SS3

Qualification: Positive results for the analytes below in the samples listed above should be qualified as estimated high (J+).

The following compounds are associated with terphenyl-d14:

Benzidine

Benzo(a)anthracene

Bis(2-ethylhexyl) phthalate

Butyl benzyl phthalate

Chrysene

3,3'-Dichlorobenzidine

p-Dimethylaminoazobenzene

Pyrene

4. REVIEW OF RESULTS

4.1 SAMPLE RESULTS

Sample results for this data package have been reviewed and are included in the Trip Report.

4.2 TARGET COMPOUND LISTS

Acceptable.

4.3 DETECTION LIMITS

Reporting limits that exceeded the screening levels are discussed in the Trip Report.

5. CORRECTIVE ACTIONS

No corrective actions have been identified for this data package.

6. QUALIFICATION OF RESULTS

Results have been qualified as noted above in Sections 2 and 3.

7. OVERALL ASSESSMENT

The data in this sample delivery group are usable for their intended purpose with the exception of one result for zinc which was rejected based on MS/MSD recovery as identified in Section 3. These data were determined not to be critical to the project and, therefore, the data meet the completeness goal.

DATA VALIDATION REPORT

PROJECT NAME: GREGG COUNTY REFINERY
LONGVIEW, TEXAS

LABORATORY: EPA REGION 6 HOUSTON LABORATORY

WORK ORDERS: 1404021, 1404023, 1404025, AND 1404027

DATA VALIDATION REPORT

Company:	Toeroek Associates, Inc.
Project Name:	Gregg County Refinery, Longview, Texas
Laboratory:	EPA Region 6 Houston Laboratory
Work Orders:	1404021, 1404023, 1404025, and 1404027
Data Validator:	Krista Lippoldt
Date Validated:	July 4, 2014
Data Validation Criteria:	As listed in Worksheet #12 of the Gregg County Refinery UFP-QAPP Revision 1 dated 3/31/2014, USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review dated June 2008, and USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review dated January 2010.
Validation Reviewer:	
Date Reviewed:	
Sample Media:	Surface Soil, Subsurface Soil, Sediment, and Groundwater
Analytical Parameters and Methods[1]:	Volatiles (VOCs) by EPA Method 8260C; Semivolatile Organic Compounds (SVOCs) by EPA Method 8270D; Metals by EPA Method 6010B/6020A; Metals by EPA Method 7470A/7471B; EDB/DBCP (1,2-Dibromoethane/1,2-Dibromo-3-chloropropane) by Method 504.1-GC/ECD

[1]The methods listed may be different than those listed in the data package. These methods were provided by the EPA Region 6 Houston Laboratory in an email dated August 01, 2014 (see attached).

Sample Identification:

Sample Number*	Date	Cooler	Type of Sample	QC Sample
SED1	4/14/2014	12	SED	+MS/MSD
SED2	4/14/2014	12	SED	
SED2-DUP	4/14/2014	12	SED Duplicate	X
SED3	4/14/2014	12	SED	
SED6	4/14/2014	12	SED	
TB15	4/14/2014	12	TB	X
SB19A	4/14/2014	13	SB	
SB19B	4/14/2014	13	SB	
SB19C	4/14/2014	13	SB	
SB21A-DUP	4/14/2014	13	SB Duplicate	X
SED4	4/14/2014	13	SED	
SED5	4/14/2014	13	SED	

Sample Number*	Date	Cooler	Type of Sample	QC Sample
SED7	4/14/2014	13	SED	
TB7	4/14/2014	13	TB	
SB20A	4/14/2014	14	SB	
SB20A-DUP	4/14/2014	14	SB Duplicate	X
SB20B	4/14/2014	14	SB	
SB20C	4/14/2014	14	SB	
SB21A	4/14/2014	14	SB	
TB9	4/14/2014	14	TB	X
ERBSED2	4/14/2014	15	EB	X
SFB6	4/14/2014	15	FB	X
TB16	4/14/2014	15	TB	X
MW18	4/15/2014	15	GW	
MW18-DUP	4/15/2014	15	GW Duplicate	X
MW8	4/15/2014	15(Metals)/16	GW	
TB8	4/15/2014	16	TB	X
ERBGW1	4/15/2014	17	EB	X
MW12	4/15/2014	17	GW	
WFB1	4/15/2014	17	FB	X
MW3	4/15/2014	18	GW	
MW6	4/15/2014	18	GW	
MW7	4/15/2014	18	GW	
TB17	4/15/2014	18	TB	X
TB19	4/16/2014	19	TB	X
MW17	4/16/2014	19	GW	
MW16	4/16/2014	19	GW	
MW1	4/16/2014	19	GW	
TB08	4/16/2014	20	TB	X
SS6	4/16/2014	20	SS	
SS7	4/16/2014	20	SS	
SS5	4/16/2014	20	SS	
SS10	4/16/2014	20	SS	
SS9	4/16/2014	20	SS	
TB21	4/16/2014	21	TB	X
MW2	4/16/2014	21	GW	
MW14	4/16/2014	21	GW	
MW13	4/16/2014	21	GW	
TB22	4/16/2014	22	TB	X
MW10	4/16/2014	22	GW	
WFB2	4/16/2014	22	FB	X
TB24	4/16/2014	23	TB	X
MW4-Dup	4/16/2014	23	GW Duplicate	X
MW4	4/16/2014	23	GW	

Sample Number*	Date	Cooler	Type of Sample	QC Sample
TB24	4/17/2014	24	TB	X
WFB3	4/17/2014	24	FB	X
ERBGW5	4/17/2014	24	EB	X
ERBSS2	4/17/2014	24	EB	X
TB26	4/17/2014	25	TB	X
MW15	4/17/2014	25	GW	
MW5	4/17/2014	25	GW	
MW11	4/17/2014	25	GW	
TB28	4/17/2014	26	TB	X
SS16	4/17/2014	26	SS	
SS16 Dup	4/17/2014	26	SS Duplicate	X
SS4	4/17/2014	26	SS	
TB25	4/17/2014	27	TB	X
MW9	4/17/2014	27	GW	+MS/MSD
IDW1	4/17/2014	28	IDW	
IDW2	4/17/2014	28	IDW	
IDW3	4/17/2014	28	IDW	
IDW4	4/17/2014	28	IDW	
IDW6	4/17/2014	28	IDW	
IDW9	4/17/2014	28	IDW	
IDW12	4/17/2014	28	IDW	
IDW13	4/17/2014	28	IDW	
IDW14	4/17/2014	28	IDW	
IDW11	4/17/2014	28	IDW	
IDW7	4/17/2014	28	IDW	
IDW8	4/17/2014	28	IDW	
IDW10	4/17/2014	28	IDW	Not on COC

* Sample Numbers are as listed in data package.

Note:

SED = Sediment Samples
SS = Surface Soil Sample
SB = Subsurface Soil Sample
GW = Groundwater Sample
Duplicate = Duplicate Sample
EB = Equipment Blank
FB = Field Blank
MS/MSD = Extra Volume for Matrix Spike/Matrix Spike Duplicate
TB = Trip Blank

1. SAMPLE INTEGRITY

1.1 SAMPLE COLLECTION

All samples were collected, handled, and identified as required by the QAPP.

1.2 PRESERVATION

Acceptable.

1.3 HOLDING TIMES

Acceptable.

2. ANALYTICAL METHODS

The following table identifies analytical methods that were not consistent with the UFP-QAPP:

Parameter	UFP-QAPP Method	Chain of Custody Method	Laboratory Method[1]
VOCs	8260C	8260C	8260C
SVOCs	8270D	8270D	8270D
Metals	6020A	6020A	6010B/6020A*
Mercury	7470A/7471A	7040A/7041A*	7470A/7471B*
EDB	504.1	504.1	504.1

*These analytical methods were not consistent with the UFP-QAPP.
Note: The VOC method was listed incorrectly in the UFP-QAPP as 8260C but should have been listed as the most current promulgated method which is 8260B.

[1]The methods listed may be different than those listed in the data package. These methods were provided by the EPA Region 6 Houston Laboratory in an email dated August 01, 2014 (see attached).

Although the chain of custody identified the incorrect analytical method for mercury analysis and the laboratory analyzed the samples using the incorrect methods for VOCs, SVOCs, metals, and mercury, it has been determined that the data is acceptable for its intended use.

3. EVALUATION OF ACCURACY, PRECISION, AND REPRESENTATIVENESS

3.1 BLANKS

When comparing aqueous blank contamination to solid sample results, 1 microgram per liter (µg/L) is approximately equivalent to 20 times the aqueous concentration for analytes reported in microgram per kilogram (µg/kg) or 0.02 times the aqueous concentration for analytes reported in milligrams per kilogram (mg/kg). The solid equivalent values have been calculated and listed in parentheses below next to the measured blank values reported in µg/L. In the lists below, "Blank" indicates the laboratory blank.

3.1.1 VOCs

Acceptable except the following:

ERBSED2 - Choroform at 11.8 µg/L (0.236 mg/kg)
Dibromochloromethane at 1.5 µg/L (0.030 mg/kg)

ERBSS2 - Acetone at 6.4 µg/L (0.128 mg/kg)
Methyl tert-butyl ether at 1.8 µg/L (0.036 mg/kg)

SFB6 - Chloroform at 12.6 µg/L (0.252 mg/kg)
Bromodichloromethane at 4.4 µg/L (0.0808 mg/kg)
Dibromochloromethane at 1.6 µg/L (0.032 mg/kg)

Aqueous Blank -
Bromomethane at 2.0 micrograms per liter (µg/L)

ERBGW1 - Methyl tert-butyl ether at 1.3 µg/L

WFB1 - Chloroform at 12.8 µg/L
Bromodichloromethane at 4.3 µg/L
Dibromochloromethane at 1.6 µg/L

WFB2 - Methyl tert-butyl ether at 1.9 µg/L

WFB3 - Acetone at 6.5 µg/L
Methyl tert-butyl ether at 1.8 µg/L

ERBGW5 - Acetone at 5.4 µg/L
Methyl tert-butyl ether at 1.9 µg/L

TB26 (Cooler 25) -

Acetone at 5.1 µg/L

Methyl tert-butyl ether at 2.0 µg/L

TB26 (Cooler 26) -

Acetone at 6.1 **J** µg/L

Methyl tert-butyl ether at 1.8 µg/L

Qualification: Positive results greater than (>) the RL but < the blank concentration should be reported as the blank concentration and qualified as nondetect (U), and results > the RL and the blank concentration but < 5 x the blank concentration should be qualified as nondetect (U).

3.1.2 SVOCs

Acceptable.

3.1.3 Metals

Acceptable except the following:

ERBSED2 - Sodium at 1,230 µg/L (24.6 mg/kg)

Zinc at 24.1 µg/L (4.82 mg/kg)

Lead at 3.6 µg/L (0.72 mg/kg)

SFB6 - Sodium at 1,170 µg/L (23.4 mg/kg)

Zinc at 23.1 µg/L (4.62 mg/kg)

Lead at 3.7 µg/L (0.74 mg/kg)

WFB1 - Sodium at 1,170 µg/L

Zinc at 23.4 µg/L

Lead at 3.6 µg/L

TCLP Blank - Barium at 0.98 mg/L

Lead at 0.46 mg/L

Qualification: Positive results > the RL but < 10 times the blank concentration should be reported as the blank concentration and qualified as estimated high (J+).

3.1.4 EDB/DBCP

Acceptable.

3.2 LABORATORY CONTROL SAMPLES (LCSs)

3.2.1 VOCs

Acceptable except the following (only lowest and/or highest is noted):

Aqueous LCS -

Acetone at 42.4 percent recovery (%R)

2-Butanone at 59%R

2-Hexanone at 64.3%R

2-Butanone at 69.2%R (TCLP)

Solid LCS - Dichlorodifluoromethane at 246%R

Chloromethane at 60.8%R

Vinyl chloride at 69.9%R

Trichlorofluoromethane at 165%R

1,1-Dichloroethene at 69.6%R

1,1,2-Trichloro-1,2,2-trifluoroethane at 214%R

Methyl acetate at 138%R

Cyclohexane at 181%R

Methylcyclohexane at 148%R

Bromoform at 141%R

Tetrachloroethene at 73%R

1,1,2,2-Tetrachloroethane at 139%R

1,4-Dichlorobenzene at 129%R

1,2-Dichlorobenzene at 131%R

1,2-Dibromo-3-chloropropane at 140%R

1,2,4-Trichlorobenzene at 135%R

Qualification: All positive results for analytes listed above should be qualified as estimated (J) and all nondetect results for the above analytes with a %R < 100% should be qualified as nondetect with an estimated RL (UJ).

3.2.2 SVOCs

Acceptable except the following %Rs (only lowest and/or highest is noted):

Aqueous LCS -

Butyl benzyl phthalate at 128%R

Hexachlorobenzene at 115%R

Pyridine at 66.2%R (TCLP)

Qualification: All positive results for analytes listed above should be qualified as estimated (J) and all nondetect results for the above analytes with a %R < 100% should be qualified as nondetect with an estimated RL (UJ).

3.2.3 Metals

Acceptable

3.2.4 EDB/DBCP

Acceptable.

3.3 MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

3.3.1 VOCs

Acceptable except the following %Rs (only lowest and/or highest is noted):

Solid MS/MSD -

Acetone at 45.4%R and 139%R

Benzene at 162%R

Qualification: Data should not be qualified based on MS/MSD data alone and, therefore, no data were qualified.

3.3.2 SVOCs

Acceptable except the following (only lowest and/or highest is noted):

Solid MS/MSD -

Benzo(b)fluoranthene at 133%R

Qualification: Data should not be qualified based on MS/MSD data alone and, therefore, no data were qualified.

3.3.3 Metals

Acceptable except the following:

Aqueous MS/MSD -

Calcium at 203%R

Copper at 173%R

Vanadium at 200%R

Zinc at 168%R

Solid MS/MSD -

Chromium at 140%R

Copper at 164%R

Vanadium at 161%R

Mercury at 71.7% and 843%R

Antimony at 44.3%R

Selenium at 66.9%R

Qualification:

Aqueous -

Positive results for calcium, copper, vanadium, and zinc should be qualified as estimated high (J+).

Solid -

Positive results for antimony and selenium should be qualified as estimated low (J-) and the nondetects should be qualified as nondetect with an estimated RL (UJ). All positive results for chromium, copper, and vanadium should be qualified as estimated high (J+). All positive results for mercury should be qualified as estimated (J) and nondetects as nondetect with an estimated RL (UJ).

3.3.4 EDB/DBCP

Acceptable.

3.4 LABORATORY, MS/MSD, AND/OR FIELD DUPLICATES

3.4.1 VOCs

Acceptable except the following MS/MSD relative percent differences (RPDs) for the following:

Aqueous MS/MSD -

Bromomethane at 32.8%

Chloroethane at 36.2%

Trichlorofluoromethane at 30.7%

1,1-Dichloroethane at 31.4%

Carbon tetrachloride at 30.4%

Dibromochloromethane at 34.3%

Bromoform at 36.4%

Styrene at 31.1%

1,3-Dichlorobenzene at 30.7%

1,2,4-Trichlorobenzene at 40.9%

SB21A/SB21A-DUP -

Ethylbenzene at 56%

SB20A/SB20A-DUP -

Cyclohexane at 59%

Methylcyclohexane at 58%

Qualification: Data should not be qualified based on MS/MSD data alone and, therefore, no qualification is necessary for the analytes with unacceptable MS/MSD results. All ethylbenzene, cyclohexane, and methylcyclohexane positive results should be qualified as estimated (J) and all nondetects as nondetect with an estimated RL (UJ).

3.4.2 SVOCs

Acceptable except the following MS/MSD RPDs for the following:

Solid MS/MSD -

3,3'-Dichlorobenzidine at 34.9%

Hexachlorocyclopentadiene at 91.4%

2,4-Dinitrophenol at 37.2%

SB21A/SB21A-DUP -

Naphthalene at 51%

2-Methylnaphthalene at 53%

Qualification: Data should not be qualified based on MS/MSD data alone and, therefore, no qualification is necessary for the analytes with unacceptable MS/MSD results. All naphthalene and 2-methylnaphthalene positive results should be qualified as estimated (J) and nondetects as nondetect with an estimated RL (UJ).

3.4.3 Metals

Acceptable except the following:

Solid MS/MSD -

Mercury at 74.3%

SED2/SED2-DUP -

Aluminum at 86%

Barium at 81%

Copper at 84%

Magnesium at 51%

Manganese at 57%

Zinc at 98%

Lead at 71%

SB21A/SB21A-DUP -

Zinc at 106%

Arsenic at 101%

SB20A/SB20A-DUP -

Manganese with a difference of > 9 times the RL

MW4/MW4-Dup -

Zinc at 54%

Qualification: All positive results for the above analytes should be considered estimated (J) and all nondetect results should be qualified as nondetect with an estimated RL (UJ).

3.4.4 EDB/DBCP

Acceptable.

3.5 SURROGATES/INTERNAL STANDARDS

3.5.1 VOCs

Acceptable except the following:

4-Bromofluorobenzene at 61.4% in sample SS6

Qualification: Positive results for the compounds below in the sample listed above should be qualified as estimated low (J-) and nondetect results should be qualified as nondetect with estimated reporting limits (UJ).

The following compounds are associated with 4-bromofluorobenzene:

Chlorobenzene

Bromoform

Styrene

iso-Propylbenzene

Bromobenzene

n-Propylbenzene

2-Chlorotoluene

4-Chlorotoluene

1,3,5-Trimethylbenzene

tert-Butylbenzene

1,2,4-Trimethylbenzene

sec-Butylbenzene

1,3-Dichlorobenzene

1,4-Dichlorobenzene

p-iso-Propyltoluene

1,2-Dichlorobenzene

n-Butylbenzene

1,2-Dibromo-3-chloropropane

1,2,4-Trichlorobenzene

Naphthalene

Hexachlorobutadiene

1,2,3-Trichlorobenzene

3.5.2 SVOCs

Acceptable except the following:

TERPHENYL-d14

Terphenyl-d14 at 144% in sample SED2-DUP

Terphenyl-d14 at 188% in sample SED6

Terphenyl-d14 at 184% in sample SED5

Terphenyl-d14 at 143% in sample SB20A

Terphenyl-d14 at 162% in sample SB20A-DUP

Terphenyl-d14 at 172% in sample SB20C

Terphenyl-d14 at 177% in sample SB21A

Terphenyl-d14 at 182% in sample SS16

Terphenyl-d14 at 168% in sample SS4

Qualification: Positive results for the compounds below in samples listed above should be qualified as estimated high (J).

The following compounds are associated with terphenyl-d14:

Benzidine
Benzo(a)anthracene
Bis(2-ethylhexyl) phthalate
Butyl benzyl phthalate
Chrysene
3,3'-Dichlorobenzidine
p-Dimethylaminoazobenzene
Pyrene

2-FLUOROBIPHENYL

2-Fluorobiphenyl at 126% in sample SS6

Qualification: Positive results for the analytes below in the sample listed above should be qualified as estimated high (J+).

The following compounds are associated with 2-fluorobiphenyl:

Acenaphthene
Acenaphthylene
1-Chloronaphthalene
2-Chloronaphthalene
4-Chlorophenyl phenyl ether
Dibenzofuran
Diethyl phthalate
Dimethyl phthalate
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Fluorene
Hexachlorocyclopentadiene
1-Naphthylamine
2-Naphthylamine

3-Nitroaniline

4-Nitroaniline

4-Nitrophenol

2-FLUOROPHENOL

2-Fluorophenol at 38.7% in MW10

2-Fluorophenol at 40.4% in MW9

Qualification: Positive results for the compounds below in samples listed above should be qualified as estimated low (J-). Nondetect results for compounds below in samples listed above should be qualified as nondetect with estimated reporting limits (UJ).

The following compounds are associated with 2-fluorophenol:

Aniline

Benzyl alcohol

Bis(2-chloroethyl) ether

Bis(2-chloroisopropyl) ether

2-Chlorophenol

1,3-Dichlorobenzene

1,4-Dichlorobenzene

1,2-Dichlorobenzene

Ethyl methanesulfonate

Hexachloroethane

Methyl methanesulfonate

2-Methylphenol

4-Methylphenol

N-Nitrosodimethylamine

N-Nitroso-di-n-propylamine

2-Picoline

3.5.3 EDB/DBCP

Acceptable.

4. REVIEW OF RESULTS

4.1 SAMPLE RESULTS

Sample results for this data package have been reviewed and are included in the Trip Report.

4.2 TARGET COMPOUND LISTS

Acceptable.

4.3 DETECTION LIMITS

Reporting limits that exceeded the screening levels are discussed in the Trip Report.

5. CORRECTIVE ACTIONS

No corrective actions have been identified for this data package.

6. QUALIFICATION OF RESULTS

Results have been qualified as noted above in Sections 2 and 3.

7. OVERALL ASSESSMENT

The data in this sample delivery group are usable for their intended purpose.